

The Bay Academy Lesson Plan Template

Topic: Wind & Pollution

Grade Level: 7th Grade Earth Science (Regents)

Essential Question (Domain 1: Planning and Preparation-Component 1c: Designing Coherent Instruction)
How can we apply our model of wind patterns to predict the destination of waste?
Standards (Domain 1: Planning and Preparation- Component 1a:Demonstrating Knowledge of Content and Pedagogy)
2.1e Weather variables are interrelated. Temperature and humidity affect air pressure and probability of precipitation Air pressure gradient controls wind velocity Standard 6 Key Idea: debate the effect of human activities as they relate to quality of life on Earth systems (global warming, land use, preservation of natural resources, pollution)

Vocabulary (Domain I: Planning and Preparation - Component 1e: Demonstrating Knowledge of Students.)	Prep Work/Materials (Domain 1 Planning and Instruction- Component 1e: Designing Coherent Instruction, Domain 3 Instruction-Component 3c: Instruction Engaging Students in Learning)	Cross Curricular Connection (Domain I: Planning and Preparation - Component 1a: Demonstrating Knowledge of Content and Pedagogy, Component 1b: Demonstrating Knowledge of Students.)
High Pressure (symbols) Low Pressure (symbols) Gradient	Google Slides Lab Handout Computers / Internet	English Fine Arts Latin Math Physical Education Science Social Studies Talent Area

Do Now/ Warm-Up (5 minutes) (Domain I Planning and Preparation-Component 1e: Designing Coherent Instruction, Domain 3: Instruction - Component 3b: Using Question and Discussion techniques Domain 3: Instruction - Component 3c: Engaging Students in Learning)
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Students will watch a Mockumentary on the life cycle of a plastic bag (https://www.youtube.com/watch?v=GLgh9h2ePYw) . This will start a discussion that leads into the mini lesson.	Utilization of UDL Utilization of leveled questions Utilization of student's prior knowledge Other
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Mini Lesson (10 minutes)

(Domain I Planning and Preparation-Component 1e: Designing Coherent Instruction, Domain 3: Instruction - Component 3b: Using Question and Discussion techniques, Domain 3: Instruction - Component 3c: Engaging Students in Learning)

Students will be asked create a T-chart in their notebooks. Students will then list out the realistic parts of the video and unrealistic parts of the video. As a class we will discuss the lifespan and cycle of plastic waste and where it ultimately ends up. Students will be given facts of the life span of plastic and where it ends up (gyres) if not disposed of / recycled properly.

Promotes higher-level thinking
Promotes higher order questions
Explicitly models expectation
Permit and extends student discussion

Active Engagement Embedded in Small Group/ Independent Work (25 minutes)

(Domain I Planning and Preparation-Component 1e: Designing Coherent Instruction, Domain 3: Instruction - Component 3b: Using Question and discussion techniques Domain 3: Instruction - Component 3c: Engaging Students in Learning)

Students will work in pairs to complete a wind / pollution path prediction lab. Pairs will be given GPS coordinates. These coordinates will show the approximate location of where their bag starts out. Using the following websites students will analyze high and low pressure patterns as well as wind maps to map out the most likely path of their plastic bag from the starting location to its destination.

<http://www.weather-forecast.com/maps/Global-Atlantic>

<http://earth.nullschool.net/>

Students will draw major pressure systems (symbols) that their bag interacts with on their maps as well as arrows to show the path of the bag.

Opportunities for students to initiate higher-order questions & extend/ enrich the discussion
Open-ended questions with multiple correct answers
Fully aligned with instructional outcomes
Permits student choice
Appropriately paced to allow time needed to intellectually engage with and reflect upon learning
Students serve as resources for one another
Student centered group work

Utilization of Webb's DOK and UDL

(Domain 1 Planning and Preparation- Component 1b: Demonstrating Knowledge of Students, 1e: Designing Coherent Instruction, Domain 3 Instruction - Component 3b: Using Question and Discussion techniques)

Tier Three (DOK 1)	Tier Two (DOK 2 & 3)	Tier One (DOK 4)
" <u>Compare / List Difference</u> between the realistic parts of the video and the comedic parts of the video"	" <u>Predict</u> where your bag may end up"	" <u>Create your map of the bags path by providing evidence of pressure systems as evidence and proof</u> "

Reflect and Connect/ Link (Summary) (7 minutes)

(Domain 1 Planning and Instruction- Component 1e: Designing Coherent Instruction, Domain 3 Instruction - Component 3c: Engaging Students in Learning, Domain 3 Instruction- Component 3d: Using Assessment in Instruction)

Students will display their maps they created and the predicted paths of their bag. Peers will conduct a gallery walk to see if there are patterns among where the bags end up. This will be discussed as a class.

Opportunity for students to consolidate understanding

Assessment (Formative or Summative)

(Domain 1 Planning and Instruction- Component 1e: Designing Coherent Instruction, Domain 3 Instruction- Component 3c: Engaging Students in Learning, Domain 3 Instruction- Component 3d: Using Assessment in Instruction)

Formative assessment will occur through listening and monitoring students conversations as they complete their labs. The lab will be collected and graded based on rubric as well as displayed in the classroom for peer review.

Integrated into instruction
Students contribute to assessment criteria
Students self-assess & are aware of characteristics of high-quality work
Specific & timely feedback
Set child-friendly goals with students

Student Grouping Utilizing Data

(Domain 1 Planning and Instruction- Component 1e: Designing Coherent Instruction, Domain 3 Instruction- Component 3d: Using Assessment in Instruction)

Students are grouped based on pre-assessment data of the Wind unit.

Learning Styles
Pre-Assessment
State Exam/ Summative Assessment
Smart Goal
Other _____

Accommodations for Students ELL, IEP/ 504 and/or Accelerated

(Domain 1: Planning and Preparation- Component 1b: Demonstrating

Accommodations for lower level learners may be provided in the preparation of an already drawn path. Student will add the pressure symbols in order for the map to be correct.

Accommodations for higher level learners may be provided in the differentiated task of ask the students to modify the settings of their wind map simulator to show jet streams or other wind patterns. This requires students to analyze different wind paths and causes.